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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/783,995	02/20/2004	Robert S. Whitehouse	14074-014001	4368

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EXAMINER
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RONESI, VICKEY M

ART UNIT	PAPER NUMBER
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1796

MAIL DATE	DELIVERY MODE
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01/10/2008

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

**Office Action Summary**

Application No.

10/783,995

Applicant(s)

WHITEHOUSE, ROBERT S.

Examiner

Vickey Ronesi

Art Unit

1796

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 26 October 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-7,9,11,13-29,36-49 and 52-84 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☐ Claim(s) \_\_\_\_\_ is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 10/26/2007 has been entered.

2. The 35 USC 103 rejection over Gross et al has been withdrawn in light of applicant's amendment filed on 10/26/2007.

3. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior office action.

### ***Priority***

4. In the amendment filed on 10/26/2007, the specification was amended to remove a benefit claim as a continuation-in-part of Application No. 10/783958. Furthermore, an application data sheet was filed which did not include a benefit claim to 10/783958. However, the declaration and power of attorney filed on 6/24/2004 claim benefits to 10/783958. It is noted that in order to perfect a benefit claim, a reference to the prior application must be inserted as the first sentence(s) of the specification of this application or in an application data sheet (37 CFR 1.76), if applicant intends to rely on the filing date of the prior application under 35 U.S.C. 119(e), 120, 121, or 365(c). See 37 CFR 1.78(a). For benefit claims under 35 U.S.C. 120, 121,

or 365(c), the reference must include the relationship (i.e., continuation, divisional, or continuation-in-part) of all nonprovisional applications.

If applicant no longer claims the benefit of 10/783958, such should be made clear on the record in the next response.

### *Claim Objections*

5. Claims 13, 19, and 65 are objected to because of the following reasons:

With respect to claims 13 and 65, they are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim.

Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Specifically, semi-open claim language “having” is incorrect with respect to the second PHA which is described with closed claim language “consisting of” in the independent claim.

With respect to claim 19, it is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Specifically, 2-B (which is the same as 1-B as defined in claim 17) cannot be 3- or 6-hydroxyalkanoates as defined by independent claim 1.

With respect to claim 65, it is not made clear that the “first PHA copolymer” and the “second PHA” copolymer are the “first PHA” and the “second PHA”, respectively.

Appropriate correction is required.

***Claim Rejections - 35 USC § 112***

6. Claims 83 and 84 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

With respect to claims 83 and 84, the term “comprises” in the phrase “the second PHA comprises” indefinite because it is not made clear if this open claim language allows for more than one PHA to be included in the second PHA component or if “comprises” is with respect to other monomers.

***Claim Rejections - 35 USC § 102/103***

7. Claim 84 is rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Lee et al (US 5,395,919).

Lee et al discloses a blend of poly-4-hydroxybutyrate (PHB, i.e., first PHA) and a new poly-β-hydroxyalkanoate (PHA, i.e., second PHA) wherein the amount of PHA is exemplified to be from 7.6-56.9 wt % (col. 9, lines 35-57; col. 14, lines 1-26). The PHA contains monomers such as 3-hydroxybutyrate, 3-hydroxyhexanoate, 3-hydroxyoctanoate, 3-hydroxydecanoate, 3-hydroxydodecanoate, and 3-hydroxydodecenoate (Table 1 in cols. 6-7; col. 15, lines 1-16). The blend is used in various articles (col. 10, lines 8-14).

Lee et al does not disclose the properties of its blend composition such as deformation angle tolerance and stiffness, however, these properties are considered to be inherent given that Lee et al teaches that beneficial mechanical properties are obtained by blending (col. 9, lines 35-57) and further given that Lee et al discloses the presently claimed ingredients in the blend

composition. Case law holds that a material and its properties are inseparable. *In re Spada*, 911 F.2d 705, 709, 15 USPQ2d 1655, 1658 (Fed. Cir. 1990).

In light of the above, it is clear that Lee et al anticipates the presently cited claims.

Alternatively, the presently claimed blend properties of deformation angle tolerance and stiffness would obviously have been present once the Lee et al product is obtained.

### ***Claim Rejections - 35 USC § 103***

8. Claims 1-7, 9, 11, 13-29, 36-49, and 52-82 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hammond (US 5,646,217).

Hammond discloses a polymer composition comprising a first polyester component containing PHA which is either a homo- or copolymer containing more than 2 monomers (col. 1, lines 32-55) and a second polyester component containing a similar or different PHA from the first PHA (col. 2, lines 13-47), wherein each component is present in a preferred amount of 20-80 wt % by weight of the composition (col. 3, lines 6-10). The PHAs are of (co)polymers of formula 1,  $-O-C_mH_n-CO-$ , wherein m is preferably 3 or 4 (i.e., 3- or 4-hydroxyalkanoates) and can be terpolymers (col. 1, lines 35-55) and have a molecular weight ( $M_w$ ) of at least 50,000 (col. 1, lines 46-49). The polyester components are either compatibilized (i.e., miscible or partially miscible) (col. 5, lines 19-28) or not compatibilized (i.e., immiscible) (col. 3, line 66-67). Hansen teaches that beneficial mechanical properties are obtained (col. 3, lines 60-61).

While Hammond does not exemplify a PHA polymer containing comonomers other than 3-hydroxybutyrate and 3-valerate, Hammond teaches in Formula I the use of a multitude of PHAs in its blend. It is therefore considered that it would have been obvious to one of ordinary

skill in the art to utilize any of the polymers taught by Hammond in a blend, thereby intrinsically obtaining the polymeric and blend properties like presently claimed.

With respect to claims 38-43 and 75-77, Hammond teaches that the PHAs having a molecular weight ( $M_w$ ) of at least 50,000 (col. 1, lines 47-48), however it fails to disclose different  $M_w$  for each of the PHAs. Nevertheless, it is not examiner's position that the molecular weights are *prima facie* obvious, absent a showing of criticality for the molecular weight. Case laws holds that if there is no evidence in the record pointing to any critical significance in a claimed molecular weight then the claims are not patentable over the prior art. *In re Hoeschele*, 406 F.2d 1403, 160 USPQ 809 (CCPA 1969). Should applicant argue criticality of molecular weight, it will be noted that applicant's examples do not indicate or suggest a critical molecular weight. Such data has little to no probative value.

9. Claims 1-7, 9, 11, 13-29, 36-49, and 52-83 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zhao et al (US 7,098,292).

Zhao et al discloses a blend comprising a polyhydroxyalkanoate copolymer of a 3- or 4-hydroxyalkanoate monomer and at least one other monomer such as 3-hydroxybutyrate and 3-hydroxyvalerate (col. 3, line 5 to col. 4, line 14) and another environmentally degradable polymer such as 3-hydroxybyrate (co)polymer having a molecular weight of at least 10,000 g/mol (col. 4, line 28 to col. 5, line 62), wherein the amount of the first copolymer can be 20, 30 or 40 wt % (col. 10, lines 1-4) and the blend can include other optional ingredients (col. 10, line 14 to col. 11, line 54). Depending on the monomers chosen in both PHAs, the miscibility of the blend as well as the melting points and glass transition temperatures are provided for.

While Zhao et al does not exemplify a PHA polymer containing comonomers other than 3-hydroxyalkanoates, Zhao et al teaches the use of a multitude of PHAs in its blend. It is therefore considered that it would have been obvious to one of ordinary skill in the art to utilize any of the polymers taught by Zhao et al in a blend, thereby intrinsically obtaining the polymeric and blend properties like presently claimed.

With respect to claims 38-43 and 75-77, Zhao et al teaches that the PHAs having a molecular weight ( $M_w$ ) of at least 10,000, however it fails to disclose different  $M_w$  for each of the PHAs. Nevertheless, it is not examiner's position that the molecular weights are *prima facie* obvious, absent a showing of criticality for the molecular weight. Case laws holds that if there is no evidence in the record pointing to any critical significance in a claimed molecular weight then the claims are not patentable over the prior art. *In re Hoeschele*, 406 F.2d 1403, 160 USPQ 809 (CCPA 1969). Should applicant argue criticality of molecular weight, it will be noted that applicant's examples do not indicate or suggest a critical molecular weight. Such data has little to no probative value.

### ***Response to Arguments***

10. Applicant's arguments filed 10/26/2007 have been fully considered but they are not persuasive. Specifically, applicant argues that Hammond fails to disclose with sufficient specificity the presently claimed copolymers.

In response, Hammond discloses a formula 1 as the polyhydroxyalkanoates in a blend, wherein this formula is sufficiently limited such that one of ordinary skill in the art is able to "at once envisage" the specific compound within the generic chemical formula (MPEP § 2131.02).



It is settled in case law that the compound is disclosed. *In re Petering*, 301 F.2d 676, 133 USPQ 275 (CCPA 1962). While Hammond et al does not exemplify blends with 4-hydroxyalkanoates, it is perfectly proper for the examiner to look to the whole reference for what it teaches rather than merely rely on preferred embodiments. *In re Courtright* 153 USPQ 735 (CCPA 1967). Note that the rejections over Hammond et al for claims 83 and 84 has been withdrawn.

### ***Conclusion***

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Vickey Ronesi whose telephone number is (571) 272-2701. The examiner can normally be reached on Monday - Friday, 8:30 a.m. - 5:00 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu Jagannathan can be reached on (571) 272-1119. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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